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EXAMINER
TANG, KENNETH

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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

		Application No.	Applicant(s)
Office Action Summary		10/621,067	FARKAS ET AL.
		Examiner	Art Unit	
		Kenneth Tang	2195	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE <u>3</u> MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
  Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *12/20/04*.

2a)☐ This action is **FINAL**.   2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-16* is/are pending in the application.

    4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-16* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *16 July 2003* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

    Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

    Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

    a)☐ All   b)☐ Some * c)☐ None of:

      1.☐ Certified copies of the priority documents have been received.

      2.☐ Certified copies of the priority documents have been received in Application No. _____.

      3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

    * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1)☒ Notice of References Cited (PTO-892)   4)☐ Interview Summary (PTO-413)

2)☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)   Paper No(s)/Mail Date. _____.

3)☐ Information Disclosure Statement(s) (PTO/SB/08)   5)☐ Notice of Informal Patent Application

    Paper No(s)/Mail Date _____.   6)☐ Other: _____.

DETAILED ACTION

1.   Claims 1-16 are presented for examination.

Double Patenting

2.   The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees.   A nonstatutory obviousness-type double patenting rejection is appropriate where the conflicting claims are not identical, but at least one examined application claim is not patentably distinct from the reference claim(s) because the examined application claim is either anticipated by, or would have been obvious over, the reference claim(s). See, e.g., *In re Berg*, 140 F.3d 1428, 46 USPQ2d 1226 (Fed. Cir. 1998); *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) or 1.321(d) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent either is shown to be commonly owned with this application, or claims an invention made as a result of activities undertaken within the scope of a joint research agreement.

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

3.   Claims 1 and 7 are rejected under the judicially created doctrine of obviousness-type

double patenting as being unpatentable over claims 1 and 14 of U.S. Patent No. 7,093,147 B2.

Although the conflicting claims are not identical, they are not patentably distinct from each other

because the plurality of computer processing jobs in claims 1 and 7 of the instant application is

equivalent to the running of the software in claims 1 and 14 of U.S. Patent No. 7,093,147 B2. In

addition, the "best fit" limitation (in view of its description on the Specification) in claim 1 of the

instant application is contained in the comparison and selection of the processing core to run the

software.

4.   Claims 1 and 14 of U.S. Patent No. 7,093,147 B2 contains every element of claims 1 and

7 of the instant application and thus anticipates the claim of the instant application. Claims 1 and

7 of the instant application therefore are not patently distinct from the earlier patent claim and as

such are unpatentable over obvious-type double patenting. A later patent claim is not patentably

distinct from an earlier claim if the later claim is anticipated by the earlier claim.

5.   "A later patent claim is not patentably distinct from an earlier patent claim if the later

claim is obvious over, or **anticipated by**, the earlier claim. In re Longi, 759 F.2d at 896, 225

USPQ at 651 (affirming a holding of obviousness-type double patenting because the claims at

issue were obvious over claims in four prior art patents); In re Berg, 140 F.3d at 1437, 46

USPQ2d at 1233 (Fed. Cir. 1998) (affirming a holding of obviousness-type double patenting

where a patent application claim to a genus is anticipated by a patent claim to a species within

that genus)." ELI LILLY AND COMPANY v BARR LABORATORIES, INC., United States

Court of Appeals for the Federal Circuit, ON PETITION FOR REHEARING EN BANC

(DECIDED: May 30, 2001).

6.   "Claim 12 and Claim 13 are generic to the species of invention covered by claim 3 of the

patent. Thus, the generic invention is **"anticipated"** by the species of the patented invention.

Cf., Titanium Metals Corp. v. Banner, 778 F.2d 775, 227 USPQ 773 (Fed. Cir. 1985) (holding

that an earlier species disclosure in the prior art defeats any generic claim) 4 . This court's

predecessor has held that, without a terminal disclaimer, the species claim preclude issuance of

the generic application. In re Van Ornum, 686 F.2d 937, 944, 214 USPQ 761, 767 (CCPA

1982); Schneller, 397 F.2d at 354. Accordingly, absent a terminal disclaimer, claims 12 and 13

were properly rejected under the doctrine of obviousness-type double patenting." (In re

Goodman (CA FC) 29 USPQ2d 2010 (12/3/1993).

7.   Claim 16 is rejected on the ground of nonstatutory obviousness-type double

patenting as being unpatentable over claim 1 of U.S. Patent No. 7,093,147 B2 in view of

Orenstien et al. (hereinafter Orenstien) (US 2003/0110012 A1).

8.   As to claim 16, U.S. Patent No. 7,093,147 B2 teaches a computer system, comprising:

a plurality of computer processor cores in which at least two differ in processing

performance, and in which all execute the same instruction set (col. 8, lines 50-53); and

a performance measurement and transfer mechanism for distributing a plurality of

computer processing jobs amongst the plurality of computer processor cores according to a best

fit of processor hardware availability to processing software requirements (col. 8, lines 54-60);

9.   U.S. Patent No. 7,093,147 B2 is silent in teaching wherein, said processing performances

depend on a forecast of particular processing jobs that will be executed.

10.   However, Orenstien teaches wherein, said processing performances depend on a forecast

of particular processing jobs that will be executed (estimation, [0043]).

11.   U.S. Patent No. 7,093,147 B2 and Orenstien are analogous art because they are from the

same field of endeavor of selecting processor cores and in the same problem solving area of

improving overall power efficiency.

12.   At the time of the invention, it would have been obvious to a person of ordinary skill in

the art to modify U.S. Patent No. 7,093,147 B2 to include Orenstein's features of forecasting or

estimating of processing jobs that will be executed.

13.   The suggestion/motivation for doing so would have been that

estimating/forecasting/analyzing the jobs beforehand could help to make desirable decisions on

when it is best to execute processes ([0043]). Therefore, it would have been obvious to combine

U.S. Patent No. 7,093,147 B2 with Orenstien to obtain the invention.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the

basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

14.   Claims 1-16 are rejected under 35 U.S.C. 102(e) as being anticipated by Orenstien et

al. (hereinafter Orenstien) (US 2003/0110012 A1).

15.   As to claim 1, Orenstien teaches a computer system, comprising:

a plurality of computer processor cores in which at least two differ in processing

performance, and in which all execute the same instruction set ([0017], [0022]-[0023]); and

a performance measurement and transfer mechanism for distributing a plurality of

computer processing jobs amongst the plurality of computer processor cores according to a best

fit of processor hardware availability to processing software requirements ([0020]-[0021],

[0027]).

16.   As to claim 2, Orenstien teaches further comprising: at least one of an operating system

(operating system 755, [0041]-[0042]), firmware ([0026]), and special-purpose hardware hosted

on the plurality of computer processor cores and including the performance measurement and

transfer mechanism (monitor 110, [0020]-[0021]), and providing for a periodic test of whether a

particular computer processing job would be a better fit of processor hardware availability to

processing software requirements on a different hosted one of the plurality of computer

processor cores ([0021], [0027]).

17.   As to claim 3, Orenstien teaches further comprising: at least one of an operating system

(operating system 755, [0041]-[0042]), firmware ([0026]), and special-purpose hardware hosted

on the plurality of computer processor cores and including the performance measurement and

transfer mechanism (monitor 110, [0020]-[0021]), and providing for a periodic test of whether a

particular computer processing job was a better fit of processor hardware availability to

processing software requirements on a previously hosted one of the plurality of computer

processor cores ([0021], [0027]).

18.   As to claim 4, Orenstien teaches further comprising: at least one of an operating system

(operating system 755, [0041]-[0042]), firmware ([0026]), and special-purpose hardware hosted

on the plurality of computer processor cores and including the performance measurement and

transfer mechanism (monitor 110, [0020]-[0021]), and providing for a test of particular operating

states within each of the computer processor cores in a decision as to where to place a given

processing software workload ([0020]-[0021]).

19.   As to claim 5, Orenstien teaches further comprising: at least one of an operating system

(operating system 755, [0041]-[0042]), firmware ([0026]), and special-purpose hardware hosted

on the plurality of computer processor cores and including the performance measurement and

transfer mechanism (monitor 110, [0020]-[0021]), and providing for a test of operating states

within each of the computer processor cores in a decision as to where to place a given processing

software workload, wherein said operating states are dependent on at least one of the operating

voltage and clock frequency of a corresponding one of the plurality of computer processor cores

([0033]-[0034]).

20.   As to claim 6, Orenstien teaches further comprising: at least one of an operating system
(operating system 755, [0041]-[0042]), firmware ([0026]), and special-purpose hardware hosted
on the plurality of computer processor cores and including the performance measurement and
transfer mechanism (monitor 110, [0020]-[0021]), and providing for a test of operating states
within each of the computer processor cores in a decision as to where to place a given processing
software workload, wherein said operating states are dependent on run-time re-configuration of
hardware structures of corresponding ones of the plurality of computer processor cores ([0018],
[0020]).

21.   As to claim 7, Orenstien teaches a method for operating multiple processor cores,
comprising:

    placing a plurality of computer processor cores on a single semiconductor die, in which at
least two computer processor cores differ in processing performance, and in which all execute
the same instruction set ([0022]-[0023], [0017]);

    measuring the performance of each of a plurality of computer processing jobs hosted
amongst the plurality of computer processor cores ([0019]); and

    transferring individual ones of said plurality of computer processing jobs amongst
targeted ones of said plurality of computer processor cores according to a best fit of processor
hardware availability to processing software requirements ([0020]-[0021], [0027]).

22.   As to claim 8, it is rejected for the same reasons as stated in the rejection of claim 2.

23.   As to claim 9, it is rejected for the same reasons as stated in the rejection of claim 3.

24.   As to claim 10, it is rejected for the same reasons as stated in the rejection of claim 4.

25.   As to claim 11, it is rejected for the same reasons as stated in the rejection of claim 5.

26.   As to claim 12, it is rejected for the same reasons as stated in the rejection of claim 6.

27.   As to claim 13, Orenstien teaches further comprising: statically associating workloads for

execution on specific processor cores based on a profiling history ([0019]-[0021]).

28.   As to claim 14, Orenstien teaches further comprising: dynamically associating workloads

for execution on specific processor cores based on an empirical measurement (SUM operation or

measured power consumption, [0033]-[0034], [0019]).

29.   As to claim 15, Orenstien teaches further comprising: associating workloads for

execution on specific processor cores based on at least one of user and application hints ([0042]).

30.   As to claim 16, Orenstien teaches a computer system, comprising:

a plurality of computer processor cores in which at least two differ in processing

performance, and in which all execute the same instruction set ([0017], [0022], [0023]); and

a performance measurement and transfer mechanism for distributing a plurality of

computer processing jobs amongst the plurality of computer processor cores according to a best

fit of processor hardware availability to processing software requirements ([0020]-[0021],

[0027]);

wherein, said processing performances depend on a forecast of particular processing jobs

that will be executed (estimation, [0043]) .

Conclusion

31.   The prior art made of record and not relied upon is considered pertinent to applicant's

disclosure:

Matoba (US 5,913,068) teaches a transfer mechanism for distributing a plurality of

computer processing jobs from various processing elements using a process management table

(col. 10, lines 18-26, Figs. 1 & 8, col. 10, lines 27-42).

32.　　Any inquiry concerning this communication or earlier communications from the examiner should be directed to Kenneth Tang whose telephone number is (571) 272-3772. The examiner can normally be reached on 8:30AM - 6:00PM, Every other Friday off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Meng-Ai An can be reached on (571) 272-3756. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Kt
7/25/07